

## ABSTRACT

The gas-metal arc welding of metal-core wire electrodes in the pure Ar shielding gas for carbon steel, low alloy steel, and ferritic stainless steel is described. Such shielding gas provides several benefits not realized by the gas-metal arc welding process with solid wires. When compared to standard argon/oxygen containing gas mixtures normally used for metal cored wires, these benefits include reduced silicate islands on the weld surface for improved weld appearance, reduced welding fume, and lower weld spatter, all of which provide easier clean-up after the welding operation. Benefits also include reduced arc penetration desirable for welding on thinner materials or handling poor joint fit-up. Lower voltage requirement further makes it possible to weld on thinner materials. Lower oxygen content in the weld deposits provide better toughness and easier welding in all-positions.